7. MASTER MAKING SECTION

CONTENTS

[Theory of Operation]

1. Heating Data Transmission System VII-1
2. Thermal Print Head Positioning System VII-2
3. Master Making System VII-4

[Removal & Assembly]

1. Thermal Print Head VII-7
2. TPH Pressure SW & TPH Home Position SW VII-8
3. Thermal Pressure Motor Ass'y VII-10
4. Write Roller VII-11

[Adjustment]

1. Thermal Power of Thermal Print Head (4200) VII-13
2. Thermal Power of Thermal Print Head (4900) VII-14
3. Thermal Power of Thermal Print Head (5900) VII-15
4. Master Making Length (Write Pulse Motor Operation Time) VII-16
5. Master Making Width VII-17
6. Thermal Power of Thermal Print Head <GR3750/2750/1750> VII-19
7. Thermal Power of Thermal Print Head <GR1700> VII-20
8. Master Making Width <GR> VII-21
9. Heating Rate of Thermal Print Head <GR> VII-22

7. Master Making Section

[Removal and Assembly]

1. Thermal Print Head

< Removal Procedure >

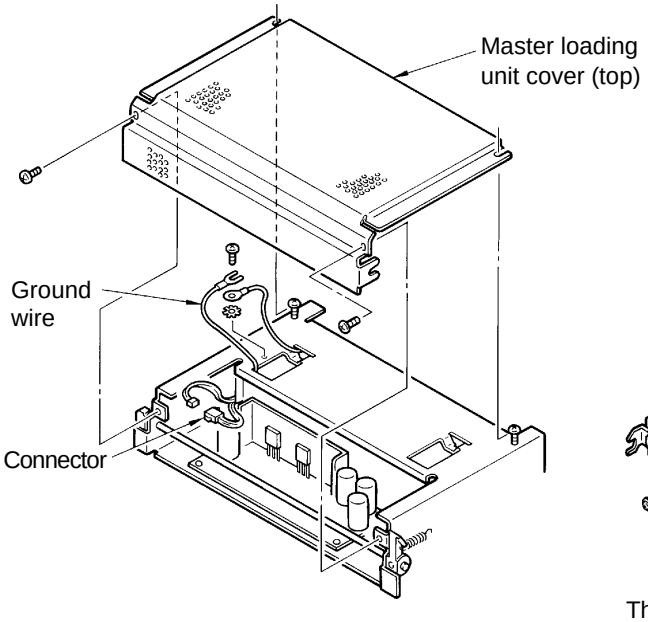
1. Turn ON the power and open the Upper cover (or the Scanner table). Then turn OFF the power.
   [Note]
   The above procedure is to raise the Thermal print head.
2. Loosen two mounting screws on the top of the Master loading unit cover (top) and remove the other two mounting screws on the front of the cover. Then remove the cover.
3. Remove the ground wire by loosening the securing screw.
4. Disconnect the connector of the Master end sensor (receive).
5. Open the Master loading unit and place a sheet of paper under the Thermal print head.
   [Note]
   This is to prevent screws from falling inside the machine when they are removed.
6. Loosen two mounting screws on the Copy guide plate (lower) and remove the plate.
   [IMPORTANT]
   Be careful not to damage the heating elements of the Thermal print head when removing the cover.
7. Remove two mounting screws on the bracket of the Thermal print head, disconnect two connectors from the Thermal print head and remove it from the Master loading unit.

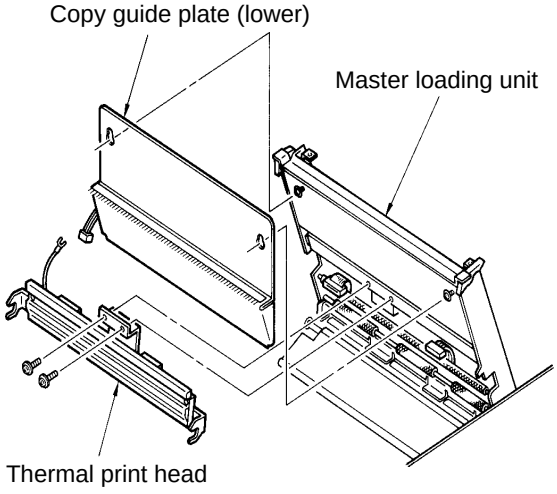
- Precautions in Removal -

- Be careful not to damage the heating elements of the Thermal print head.
- Be careful not to touch the metal pins of the connectors. Static discharge may damage the Thermal print head.

- Precautions in Assembly -

- Be sure to adjust the thermal power each time the Thermal print head is replaced, referring to pages VII-13 to VII-16.

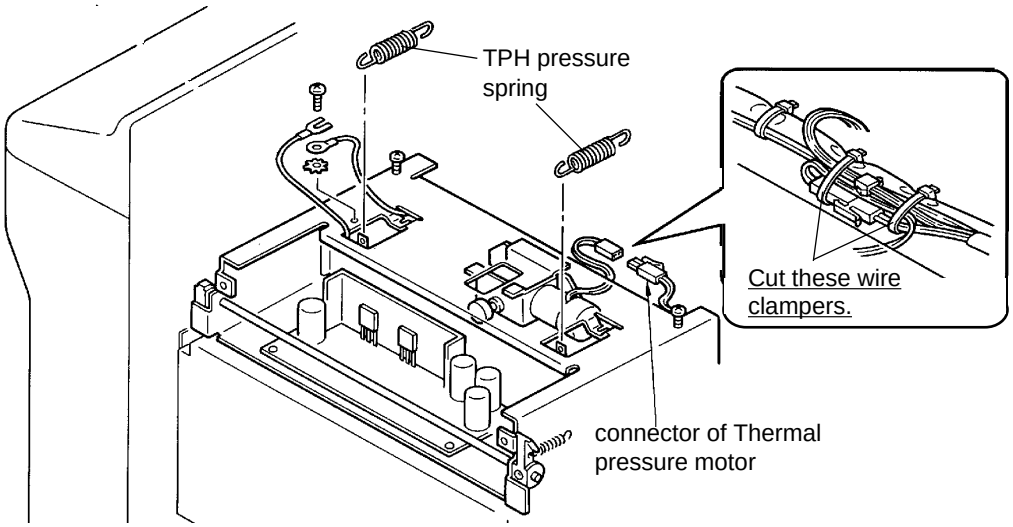




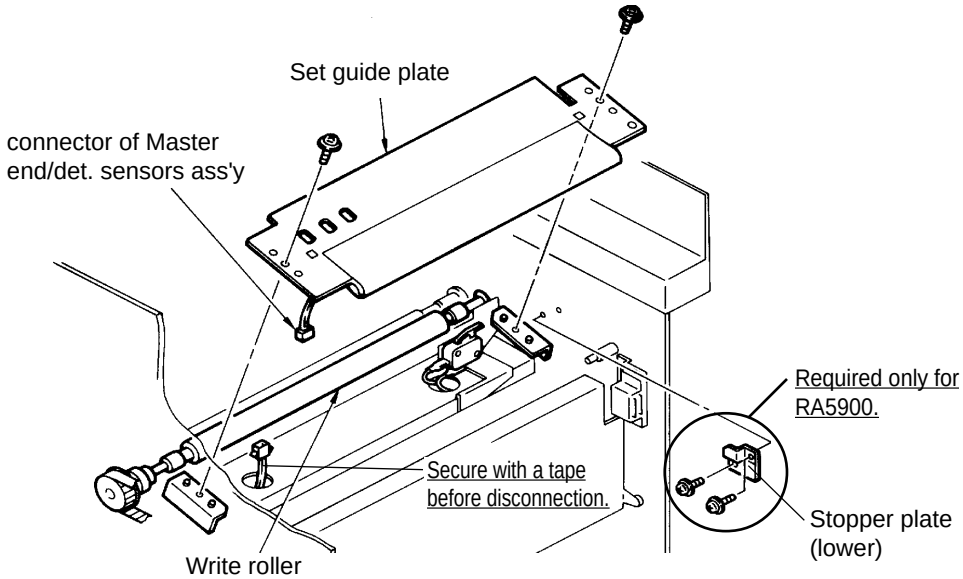
2. TPH Pressure SW & TPH Home Position SW

< Removal Procedure >

1. Remove the Thermal print head, referring to page VII-7.
2. Close the Master loading unit and remove the TPH pressure springs on both sides of the unit.
3. Cut the wire clampers holding the wires of the Thermal pressure motor and disconnect the connector of the Thermal pressure motor.



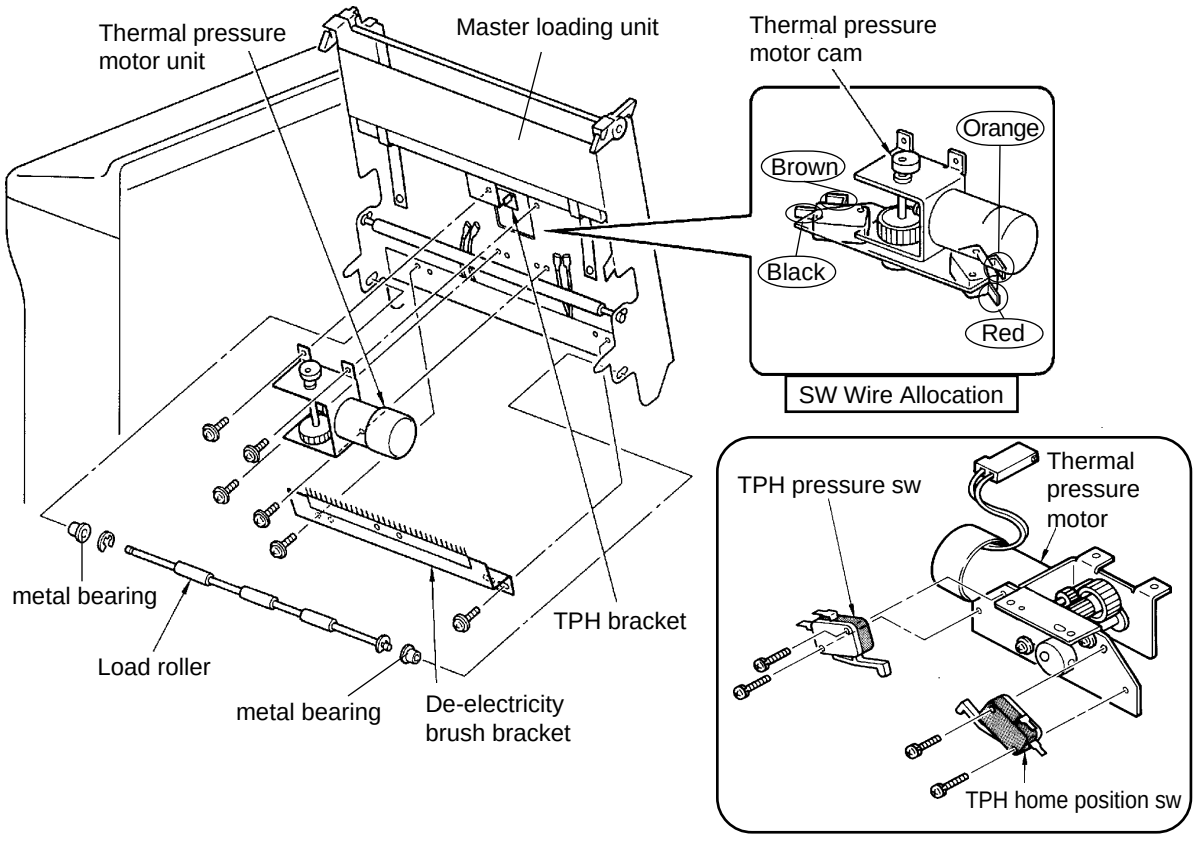
4. Open the Master loading unit.
5. Remove two mounting screws on the Set guide plate and set aside the plate.
   [Note]
   In RA5900, the Stopper plate (lower) should be removed to remove the mounting screw of the Set guide plate on the rear side of the machine.
6. Disconnect the connector of the Master end detection sensor assembly and remove the Set guide plate from the machine.
   [Note]
   Secure the wires of the counterpart connector with tape before disconnection to prevent it from slipping inside.


Set guide plate
connector of Master end/det. sensors ass'y
Required only for RA5900.
Secure with a tape before disconnection.
Stopper plate (lower)
Write roller

7. Place a sheet of paper below the Master loading unit to prevent E rings and screws from dropping inside the machine when removed.
8. Remove an E ring securing a metal bearing at one end of the Load roller shaft and slide the metal bearing on the shaft off the Master loading unit frame.
   Remove the Load roller from the Master loading unit, shifting it sideways.
   [IMPORTANT]
   Don't drop the metal bearing at the other end of the Load roller shaft when removing the roller.
9. Remove two mounting screws on the De-electricity brush bracket and remove the bracket.
10. Remove four mounting screws on the Thermal pressure motor unit and remove the unit from the Master loading unit frame.
11. Holding the Thermal pressure motor unit, disconnect wires from the terminals of the TPH pressure sw and TPH home position sw.
12. Remove two mounting screws respectively on the TPH pressure sw and TPH home position switch and separate them from the Thermal pressure motor unit.

- Precautions in Assembly -

- Confirm the installation direction of the switches before attaching them to the unit.
- Connect wires to the correct terminals of the TPH pressure sw and TPH home position switch, referring to the figure below.
- Grease the Thermal pressure motor cam and part of the TPH bracket where contact is made with the Thermal pressure motor cam.
- Match the respective positioning holes of the De-electricity brush bracket and Set guide plate with the corresponding bosses on the machine frame when securing them.
- Secure the TPH pressure switch connector and wires to the TPH home position switch and Thermal pressure motor with wire clampers in the same way as before removal.



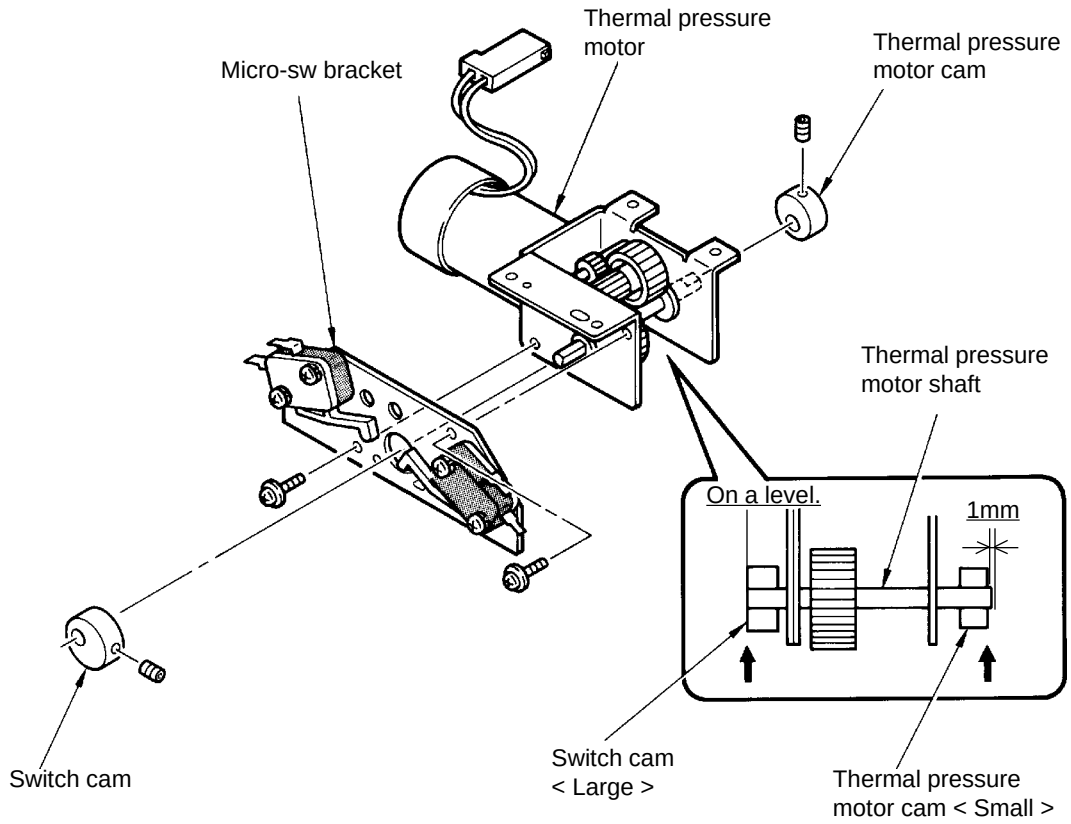
3. Thermal Pressure Motor Assembly

< Removal Procedure >

1. Remove the Thermal pressure motor unit, referring to pages VII-8 & VII-9.
2. Loosen the respective allen screws securing the Switch cam and Thermal pressure motor cam on the Thermal pressure motor shaft and remove these cams.
3. Remove two mounting screws on the Micro-switch bracket and separate the bracket from the Thermal pressure motor assembly.

- Precautions in Assembly -

- Match the positioning holes of the Micro-switch bracket with the bosses on the Thermal pressure motor assembly when attaching it.
- Remember that the Switch cam is larger than the Thermal pressure motor cam. Secure the Switch cam with its side face level with the end of the shaft and the Thermal pressure motor cam with the end of the shaft protruding by 1mm from the cam's side face, as shown in the figure below.
- Tighten the allen screw on the flat cut face of the shaft when securing the cams.
- Grease the Thermal pressure motor cam.



4. Write Roller

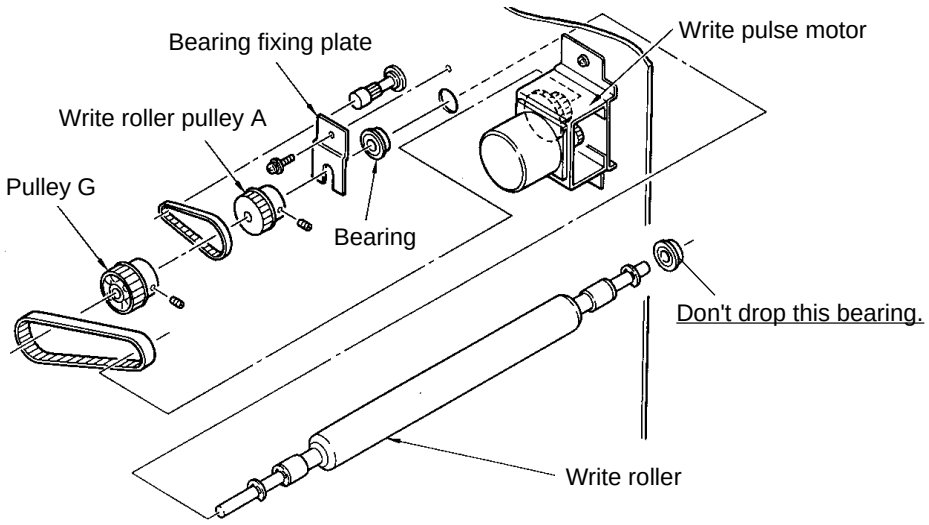
< Removal Procedure >

1. Turn ON the power and open the Upper cover (or the Scanner Table) and Master loading unit. Then turn OFF the power.
   [Note]
   The above procedure is to raise the Thermal print head.
2. Remove the Front right cover.
3. Remove three mounting screws on the Power supply cover plate located on the left of the Power supply unit and let the plate hang free.
4. Loosen two mounting screws on the Write pulse motor and remove the belt on <Pulley G> by sliding the motor.
5. Loosen the allen screw securing <Pulley G> on the shaft and slide the pulley off the shaft.
6. Remove the belt on the Write roller <Pulley A> and loosen the allen screw securing Write roller <Pulley A > on the shaft. Then slide the pulley off the shaft.
7. Remove the securing screw on the Bearing fixing plate and remove the plate and bearing.
8. Pull the Write roller toward the operation panel side to slide out the other end from the rear side machine frame and take it out from below the Master loading unit.
   [IMPORTANT]
   There is a bearing put on the other end of the Write roller. Do not drop it into the machine.

- Precautions in Assembly -

- Do not mount the Bearing fixing plate in reverse. The imprinted part number should face you. Also, match a small boss on the plate into a hole on the machine frame when securing it.
- Secure <Pulley G> and Write roller <Pulley A> on the Write roller shaft, following the steps below.
  1. Mount <Pulley G> so that its outer face is level with the end of the Write roller shaft.
  2. Pull Write roller <Pulley A> against <Pulley G> and secure Write roller <Pulley A>.

  The allen screws should be tightened on the flat-cut face of the Write roller shaft.
- Confirm that the belt tension on the Write pulse motor is neither too loose nor too tight after assembly.

- **Phenomenon with a worn Write roller -**

- If the Write roller is worn;
  images on prints may appear blurred on the edges or at about 60mm invervals ("60mm" is equal to the circumference of the Write roller), or wrinkles will be made during master making.